Solar challenges and opportunities:

Challenges:
1) Lack of manufacturing capability.
2) Lack of integration with global value chains.
3) High investment cost for individual buyers who are dependent on existing government electricity infrastructure restricting demand.
4) Low production and capacity of batteries for storage and to provide electricity during non solar generation hours.
5) Poor solar service (after sales) capability.
6) Low R&D spending in developing newer solar technologies.
7) Raw material mining limitations of metals.
8) Low behavioural change towards individual solar installations.
9) Less technology transfer from developed countries.
10) Low skilled labour availability.
11) Poor industry academia connect.

Opportunities:
1) Government schemes and subsidies for manufacturing, solar panels use (kusum), viability gap funding, industrial corridors, tool hubs etc.
2) Low solar energy generation costs.
3) Remote hamlets.
4) Growing recycling technology and economy which allows cheaper and abundant raw material acquisition.
5) Mega solar parks.
6) Government renewable energy targets.
7) Renewable energy purchase obligations to DISCOMs.
8) Hybrid power plants with wind etc.
9) New academic industry partnerships.
10) Government skilling programmes are trying to focus on solar skill generation.
11) R&D in new solar technologies and manufacturing.
12) Electricity supply to other countries like neighbouring countries through interconnected grids opens new markets.
13) Continuously increasing energy usage per capita across the world.
14) Electric vehicles, robots, smartphones etc new devices consuming electricity increasingly.
15) Green bonds, futures, renewable energy exchanges etc attract open new investments. They also encourage buying of solar energy with ease.